

Application Serial Number 10/535,070
Response to Office Action
Dated September 27, 2006

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REMARKS / DISCUSSION OF ISSUES

Claims 1-13 are presently pending. Claims 1, 9 and 13 are in independent form.

Unless indicated otherwise, claims are amended for non-statutory reasons: to correct one or more informalities, remove figure label number(s), and/or to replace European-style claim phraseology with American-style claim language.

Request for Examination of Claims 8-9 & Request for Withdrawal of Finality of the Present Rejection

Claim 8 depends from claim 2 and claim 9 is in independent form. At page 7, the Office Action states that claims 6-13 are rejected in view of applied art. The Office Action provides bases of rejections for claims 6, 7, 10, 11, 12 and 13. However, no bases for rejections have not been articulated as to claims 8 and 9. Applicants have reviewed the non-final Office Action of April 4, 2006, which appears to be substantially identical to the present Office Action. The non-final action is also void of substantive rejection of the noted claim.

Based on the foregoing, Applicants respectfully request that formal examination of claims 8 and 9 be provided in a subsequent non-final action. Furthermore, because the present Office Action does not properly address claims 8 and 9, Applicants submit that it is improper for the present rejection to be made Final. Withdrawal of the finality is respectfully requested.

Rejections Under 35 U.S.C. § 103

1. Claim 1 was rejected under 35 U.S.C. § 103(a) as being obvious in view of *Van Den Meerakker, et al.* (Journal of the Electrochemical Society, 147(7) pages 2757-2761 (2000) and *Gruning, et al.* (U.S. Patent 5,987,208) and *Bielgelsen, et al.* (U.S. Patent 5,607,876). For at least the reasons set forth herein, Applicants respectfully submit that this rejection is improper and should be withdrawn.

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Analysis of obviousness under 35 U.S.C. §103 requires determination of the scope and content of the prior art, the differences between the prior art, and the claims at issue, and the level of ordinary skill in the pertinent art.

W.L. Gore & Associates, Inc. v. Garlock, Inc. 220 USPQ 303, 311 (1983) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (CAFC 1966)). Moreover, there must have been something present in the teachings of the prior art to suggest to one skilled in the art that the claimed invention would have been obvious.

W.L. Gore & Associates at 311 (citing *In re Bergel* 130 USPQ 206, 208 (CCPA 1961); and *In re Spinnoble* 160 USPQ 237, 244 (CCPA 1969)).

Furthermore, obviousness can only be established by combining or *modifying the teachings of the prior art to produce the claimed invention where there is a reason, suggestion or motivation to do so. The reason, suggestion or motivation may come from references themselves; from knowledge of those skilled in art that certain references or disclosures in references are known to be of interest in the particular field; or from nature of the problem to be solved to do so found in the references themselves or in the knowledge generally available to one of ordinary skill in the art.* *Pro-Mold and Tool Co. v. Great Lakes Plastics Inc.* 37 USPQ2d 1626 (CAFC 1996). Moreover, prior knowledge in the field must be supported by tangible teachings of reference materials. *Cardiac Pacemakers Inc. v. St. Jude Medical Inc.* 72 USPQ 2d 1333, 1336 (CAFC 2004). (Emphasis provided).

However, hindsight is never an appropriate motivation for combining references and/or the requisite knowledge available to one having ordinary skill in the art. To this end, relying upon hindsight knowledge of applicants' disclosure when the prior art does not teach nor suggest such knowledge results in the use of the invention as a template for its own reconstruction. This is wholly improper in the determination of patentability. *Sensonic Inc. v. Aerosonics Corp.*, 38 USPQ 2d 1551-1554 (CAFC 1996), citing *W.L. Gore & Associates, Inc. v. Garlock, Inc.* 220 USPQ 303. Moreover, the determination of obviousness cannot be based on the hindsight combination of components selectively culled out from the prior art to fit the parameters of the claims at issue. *Crown*

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Operations International Ltd. v. Solutia Inc. 62 USPQ2d 1917, 1922 (CAFC 2002).

i. Claim 1 is drawn to a method of manufacturing nanowires from semiconductor material. The method features,, inter alia: *anodically etching so as to form substantially parallel pores with a pitch corresponding to the pitch of the openings in the etching mask at a current density such that the diameter of the pores becomes at least as great as the pitch of the pores, whereby nanowires are formed.*

First, Applicants note that the reference to *Van Den Meerakker, et al.* is drawn to etching macropores in silicon. As stated in the response to the April 6, 2006 Office Action, there is no teaching or suggestion found in the applied art of a method of fabricating nanowires as specifically claimed. At page 9 of the present Office Action, the Examiner concedes that the reference is silent on the fabrication of nanowires. However, the Examiner then attempts to cobble a rejection, which Applicants submit is based on unsubstantiated assertions. In particular, the Examiner states, inter alia:

material (silicon wafer). It is noted that Meerakker is silent about nanowires, however, the change relative to the etch depth and diameter of the pores is considered to be a change in size and shape. therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Van Den Meerakker to select any etch depth or pores diameter including the ones where pores diameters would intercept to form nanowires because it has been held that limitations relating to the size of the package were not sufficient to patentably distinguish over the prior art (see MPEP chapter 2144.04). One of ordinary skill in the art would have been motivated to scale the etch depth and pores diameters in order to obtain nanowires.

Thus, although the Examiner concedes that the reference does not disclose nanowires, the Examiner nonetheless alleges that their fabrication would have been obvious to one of ordinary skill in the art. Applicants submit that this reasoning is flawed.

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Furthermore, the Examiner provides no basis for the assertion of obviousness in the rejection of claim 1 as required. To wit, and as noted above, obviousness can only be established by combining or *modifying the teachings of the prior art to produce the claimed invention where there is a reason, suggestion or motivation to do so. The reason, suggestion or motivation may come from references themselves; from knowledge of those skilled in art that certain references or disclosures in references are known to be of interest in the particular field; or from nature of the problem to be solved to do so found in the references themselves; or in the knowledge generally available to one of ordinary skill in the art.*

However, the reason, suggestion or motivation to modify the teachings of *Van Den Meerakker, et al.* to arrive at the noted features of claim 1 is merely alleged by the Examiner. In particular, the Examiner does not cite anything in the applied reference that provides the required reason, suggestion or motivation to modify the teachings of the reference to arrive at the noted features of claim 1. Although the reason, suggestion or motivation may come from knowledge generally available to one of ordinary skill in the art, the Examiner offers no evidence in support of this position. If the reason, suggestion or motivation is based on the Examiner's personal knowledge, Applicants respectfully request that an affidavit under 37 C.F.R. § 1.104(d)(2) be provided.

ii. Claim 1 also recites: "etching takes place in the second period at a higher current density than in the first period so that the nanowires formed have a greater diameter in the first region than in the second region, with the result that the nanowires break off in the second region upon removal."

The Examiner turns to *Gruning, et al.* for the disclosure of the above-noted features of claim 1. This reference may relate to electrochemical etching using different current densities, but the reference fails to disclose the fabrication of nanowires; or that the diameter of nanowires in a second region is smaller than in a first region to facilitate breaking off of the nanowires in the second region. Furthermore, at page 4 of the Office Action, in the penultimate paragraph, the Examiner supplies motivation for narrowing the

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diameter of the nanowires to facilitate breaking off the nanowires. However, there is no evidence in support of this motivation. As such, and for reasons similar to those provided above, Applicants submit that this rejection is improper for lacking proper motivation to combine the references.

Moreover, Applicants respectfully submit that the Examiner has applied impermissible hindsight in the rejection of claim 1. To this end, the references to *Van Den Meerakker, et al.* and *Gruning, et al.* relate to etching of deep macropores and an optical structure suitable as an optical waveguide or cavity formed by electrochemical etching, respectively. Neither reference discloses fabrication of nanowires. As such, Applicants respectfully assert that the Examiner has cobbled a rejection using Applicants claim 1 as a template for its reconstruction; and in each instance that a feature of the claim is not disclosed in the references, the feature is discounted as being obvious.

2. Claims 2-5 were rejected under 35 U.S.C. § 103(a) as being obvious in view of *Van Den Meerakker, et al.* in view of secondary, tertiary and quaternary references. Claims 2-5 depend from claim 1. While in no way conceding as to the propriety of these rejections, Applicants respectfully submit that claims 2-5 are patentable over the applied art at least because of their dependence on claim 1. Applicants reserve their right to raise substantive arguments in support of the patentability of claims 2-5 in future replies, if necessary.

3. Claims 6-13 were rejected under 35 U.S.C. § 103(a) as being obvious in view of *Van Den Meerakker, et al.* in view of additional references. Claims 6-8 and 11-12 depend indirectly from claim 1. While in no way conceding as to the propriety of these rejections, Applicants respectfully submit that claims 6-8 and 11-12 are patentable over the applied art at least because of their dependence on claim 1. Applicants reserve their right to raise substantive arguments in support of the patentability of claims 6-8 and 11-12 in future replies, if necessary.

No substantive rejection of claims 8 and 9 have been provided as noted above.

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The rejection of claim 13 relies on *Van Den Meerakker, et al.* in much the same way as the rejection of claim 1, stating:

As to claim 12, 13 the modified method of Van Den Meerakker as described above would provide a method of manufacturing a device provided with nanowires on a substrate, in which method a dispersion of nanowires is provided on the substrate, characterized in that the dispersion as claimed in claim 7 is provided on the substrate. The dispersion can be used to manufacture any electronic device comprising a layer in which nanowires are dispersed, which nanowires have a predefined length distribution.

Claim 13 is drawn to an electronic device and not a method of manufacture. Moreover, the Examiner provides no basis for the assertions of the last sentence of the quoted portion of the rejections. By similar reasoning as provided in the response to the rejection of claim 1, Applicants submit that no evidence to support the suggested modification of *Van Den Meerakker, et al.* has been provided. Accordingly, without the required evidence in support of the suggested modification, this rejection is improper and should be withdrawn.

Conclusion

In view the foregoing, applicant(s) respectfully request(s) that the Examiner withdraw the objection(s) and/or rejection(s) of record, allow all the pending claims, and find the application in condition for allowance.

If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

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